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ABSTRACT

The state of future studies and the significance of futures thinking for higher education are considered. It is suggested that the future studies arena is not very large or well-organized and that it has not been growing, in part because it does not fit well into academe. Basic themes of future studies are described as an axis of contention between two visions of post-industrial society: one characterized as a high-technology service or information society; the other as a more decentralized ecologically-oriented, and self-reliant society. These two post-industrialisms are outlined in four charts and an appendix of selected readings. An additional chart describes four states of society and four corresponding states of higher education: (1) an extrapolation of long-term trends resulting in a flourishing economy and higher education remaining essentially unchanged in structure and processes; (2) a stagnant or worsening economy, with business and technical studies dominating the campus; (3) a major war or depression resulting in campuses closed, incinerated, or converted to housing for refugees or felons--higher learning unable to adapt; and (4) a widespread admission of an ignorant society where learning needs have outdistanced attainments, with universities becoming the center of the conscious search for new paradigms, more adult and part-time learners and less credit and credentials, correction of biases in professional schools toward big technology and overly hierarchic services, and a center for integrative future studies on every campus. The two positive scenarios (numbers one and four), reflecting the positive realization of the two post-industrialisms, are given a probability of 10 percent each, and the two negative scenarios have a probability of 40 percent each. (Author/SW)

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THE TWO POST-INDUSTRIALISMS AND HIGHER EDUCATION

by Michael Marien

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The Two Post-Industrialisms and Higher Education

by Michael Marien

The term "post-industrial society" is widely used in futurist writings, but has two very different meanings. To some it means a high-technology, service-oriented society; to others, it means a sustainable, environmentally-sensitive, decentralized human scale society. *Future Survey* editor Michael Marien considers the role of future studies and higher education in each of these two very different societies.

A futurist, in my view, is—or should be—someone broadly concerned with changes that are taking place, possible developments in the future, and ideas about what ought to be done. But I sometimes wonder whether futurists, or future studies, really exist!

For example, consult any dictionary—even one as recent as the 1980 edition of the *American Heritage Dictionary*—and you will be informed that a futurist is a follower of an Italian art movement initiated around 1910. Or turn to the Public Affairs Information Service index (*P.A.I.S. Bulletin*), where the entry for "Futures" has to do with commodities trading. Following this entry is "Futurology"—a mythical branch of learning—under which it says "see Forecasting." Under "Forecasting," in splendid reductionist fashion, it says see Business Forecasting, Economic Forecasting, Election Forecasting, Population Forecasting, Earthquake Forecasting, and Weather Forecasting. These specialties are all concerned with the future, it is true, but, they have little to do with future studies, which attempts to consider the larger picture of man, nature, and society.

Continuing my search, I found no mention of future studies or futurism in the 1971 *Encyclopedia of Education* (Macmillan and Free Press), or in the 1977 *International Encyclopedia of Higher Education* (Jossey-Bass). In the latter compendium, under "Interdisciplinary Studies," there are brief mentions of regional studies, environmental studies, peace studies, and women's studies—but not future studies.

The following four questions will serve as a framework for my comments:

1) What significant changes (new conceptual perspectives or methodological developments) are occurring in the futures studies arena?

2) What major societal and/or intellectual changes of greatest interest are emerging from a synthesis of futures research?

3) Why are these change dimensions occurring, and how do they affect the way we study the future?

4) What is the significance of these ideas for people who study higher and postsecondary education as a major societal institution?

Change and Non-Change in the Future Studies Arena

The first question about changes in the future studies arena requires some explanation of the size and amorphous shape of the arena. Perhaps the best point of reference is to compare it with the

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This article is based on the author's keynote address to the Closing General Session of the 1982 Annual Meeting of the Association for the Study of Higher Education, and is reprinted with permission of *The Review of Higher Education*.

study of higher education. As described by Jack Cooper,[1] no one seems to know exactly what a professor of higher education is, there is an absence of a common and cumulative knowledge base, much of the scholarly literature in higher education is produced by scholars in other disciplines, and their expertise is little recognized. This is equally true in future studies, and probably more so for at least two reasons. First, both professors and the public have some idea of what higher education is, whereas thinking about the future has a variety of meanings for a variety of people, including futurists. Second, a professor of higher education presumably has a doctorate of some sort, but this is not true for futurists. Indeed, many of the best-known futurists, such as Herman Kahn, Buckminster Fuller, Hazel Henderson, Robert Theobald and Alvin Toffler, do not have earned doctorates. In an age that is choked with credentialism, future studies, for better or worse, is absolutely free of this rigidity. A futurist is merely someone who calls himself or herself a futurist (or is seen as such), or who pays $20 a year for World Future Society membership, which is open to anyone. Although the World Future Society has held four General Assemblies there is no professional association with the usual panoply of elected officers and committees.

There are several journals that are "futurist" in their titling (*FUTURES, The Futurist, Futurics, World Future Society Bulletin, Technological Forecasting and Social Change, Futuribles, World Futures,* and the *Journal of Forecasting*), but they are not core journals as in other disciplines and professions: that is, the best futures articles are not necessarily found in these journals (and, conversely, contributors are not necessarily "futurists" by any definition). Only a handful of colleges and universities offer graduate programs in future studies; all told there are perhaps several hundred college-level futures courses. The 1979 guidebook issued by the World Future Society[2] lists some 400 courses and programs at high school and college levels, but the last systematic inventory of futures courses was conducted in 1974.[3] In marked contrast, consider the progress of another new interdisciplinary area, women's studies. According to Florence Howe, about 350 colleges now have organized programs, 600 other institutions offer at least 25 courses in women's studies, and there are perhaps 20,000 such courses nationwide, a ten-fold growth since 1973.[4] Thus, as an extremely rough guesstimate, there are perhaps 40 times as many courses and programs in women's studies as in future studies.

Additional indicators of the size and shape of future studies are provided by the 1979 World Future Society guide, which lists 270 public and private organizations worldwide, encompassing, for the most part, research institutes large and small, and capsule biographies of some 560 individuals "active in the futures field" worldwide. But this broad assortment of individuals has little in common. Although listed in the directory, some would not view themselves primarily as futurists, or as any sort of futurist at all. For many it is a secondary identity, reinforced by the economic reality that they are hired as sociologists, city planners, policy analysts, etc. It is truly an exercise in definition-bending to view this diverse group as a field or discipline.

Yet there are frequent references by enthusiasts to an emerging field—even an emerging discipline—but invariably without any supporting data. In 1973, for example, sociologist Marvin Wolfgang, President of the American Academy of Political and Social Science, enthused in *The ANNALS* that "Futuristic studies are all around us and are growing enormously each year."[5] Regrettably, this is not true today—and may not have been true even in 1973.

I would like to offer several indicators to suggest how thinking about the future has been going on for some time, how it expanded in the 1967-68 period, enjoyed a vogue for about five or six years, and has been stable or somewhat in decline since then, while also undergoing an important ideological bifurcation.

The first indicator (Chart 1) shows the number of entries for "future" and "future studies" in *The Education Index*. One can see virtually no interest up through 1966-67, which registered a slight climb, followed by a jump in 1967-68. From that time, the entries stay at a plateau, except for two high years in the mid-1970s and a low year in 1979-80, which may portend a decline.

Chart 1.

Entries for "Future" and "Future Studies" in *The Education Index*, 1950-1981

	"Future"	"Future Studies"	Total
1950-53	1	—	1
1953-55	—	—	—
1955-57	1	—	1
1957-59	4	—	4
1959-61	5	—	5
1961-63	3	—	3
1963-64	2	—	2
1964-65	4	—	4
1965-66	1	—	1
1966-67	8	—	8
1967-68	28	—	28
1968-69	27	—	27
1969-70	26	—	26
1970-71	29	—	29
1971-72	34	—	34
1972-73	26	—	26
1973-74	26	—	26
1974-75	14	12	26
1975-76	22	15	37
1976-77	25	15	40
1977-78	24	4	28
1978-79	18	8	26
1979-80	11	7	18
1980-81	21	4	25

Chart 2.

A Popular History of Recent Futures Thinking: Futures-Relevant Non-Fiction (Hardcover) Best-Sellers in *Publisher's Weekly*, 1965-1981.

1965—Graham, Billy. *World Aflame*, NY: Doubleday.
1966—
1967—Galbraith, John Kenneth. *The New Industrial State*. Boston: Houghton Mifflin.
1968 - 1969
1970—Reich, Charles. *The Greening of America*. NY: Random House.
—Toffler, Alvin. *Future Shock*. NY: Random House.
1971—(Reich and Toffler remain on list)
—Brand, Stewart. *The Last Whole Earth Catalog*. NY: Random House.
—Revel, Jean-François. *Without Marx or Jesus: The New American Revolution Has Begun*. NY: Doubleday.
—Skinner, B.F. *Beyond Freedom and Dignity*. NY: Knopf.
1972 - 1977
1978—Simon, William E. *A Time for Truth*. NY: Reader's Digest Press.
1979—Ringer, Robert J. *Restoring the American Dream*. NY: QED/Harper & Row.
—Ruff, Howard J. *How to Prosper in the Coming Bad Years*. NY: Times Books.
1980—Casey, Douglas R. *Crisis Investing: Opportunities and Profits in the Coming Great Depression*. NY: Stratford/Harper & Row.
—Drucker, Peter F. *Managing in Turbulent Times*. NY: Harper & Row.
—Friedman, Milton and Rose. *Free to Choose*. NY: Harcourt Brace Jovanovich.
—Toffler, Alvin. *The Third Wave*. NY: Morrow.
1981—Gilder, George. *Wealth and Poverty*. NY: Basic Books.
May 1982—Schell, Jonathan. *The Fate of the Earth*. NY: Knopf.

The second indicator (Chart 2) is a quick scan of recent cultural history, looking at futures-relevant non-fiction books on the *Publishers Weekly* best-seller list. Insofar as popular attention, the biggest years for futures were 1970 and 1971, particularly due to Alvin Toffler's *Future Shock*, which sold six million copies in twenty languages (according to the author information in Toffler's *Eco-Spasm Report*). Toffler introduced many people to thinking about the future with his wide range of imaginative and provocative ideas—and probably scared away an equal number with his heated rhetoric, cute neologisms, and portentious overstatement. After the success of *Future Shock* and a handful of others, and a dry period in the mid-1970s, conservative best-sellers began to flourish in 1978, presaging the present regime in Washington. Although never mentioning the future explicitly, they were certainly suggesting how to shape the future. The one non-conservative best-seller in recent years is Toffler's *The Third Wave*, which owes at least some of its success to *Future Shock*.

The third indicator (Chart 3) has to do with commissions, anthologies, and symposia on the general future, and it generates a number of observations. This indicator is particularly important because bringing minds together to consider the course of human affairs is a significant integrative activity, and in many respects the very core activity of future studies rather than, as some imagine, employing various quantitative techniques in forecasting. Indeed, forecasting has provided remarkably little help in our efforts to improve our understanding of possible and probable futures.

My first observation on this chart is that the activity of collective thinking about the future has been going on for some time in this century, beginning with *Essays in Post-Industrialism* in 1914, which, incidentally, is the first use of the term "post-industrialism." Also noteworthy is the 1933 report of the President's Research Committee on Social Trends, which remains an exemplary, first-rate effort to consciously and systematically integrate thinking. Skipping to the late 1960s, we can see the beginnings of the futures vogue in 1967, with the publication of the much-ballyhooed "work in progress" of the Commission on the Year 2000. This anthology is really not much different from others before or after; also, it is noteworthy that the Commission never completed its mission, promising volumes from each of eight study groups, but only delivering one (Perloff, 1971). Also in this period, we can see the first collection of futures readings by Richard Kostelanetz, a prolific chronicler of the avant-garde, who published three other readers in 1971 and 1973, and has since then had nothing to do with futures, retreating—or simply turning—to the realm of literature and poetry. The same direction has been taken by *Saturday Review*.

Starting in 1975, we can see the beginning of an ideological bifurcation, with volumes that are conservative in orientation and others that are focused on the intertwined themes of environmental values, world order, and human potential. Finally, note that, other than the easily-compiled anthologies from *The Futurist* and *FUTURES*, the last compilations of readings for classroom use were published in 1973 (Tugwell; Kostelanetz); apparently, there has been an insufficient market for a futures anthology since then!

In sum, the futures arena is not very large, or well-organized. Despite many undocumented as-

sertions to the contrary, it has not been growing. We certainly have grave problems in our society and the world, and a need to acquire some sense (no matter how murky) of where we are headed, and to develop ideas about what we can do. Why then has future studies remained so static? Let me venture a few speculations:

1) First, there is growing uncertainty and shrinking horizons. The Commission on the Year 2000 aimed 33 years ahead; the 1975 World Future Society General Assembly considered "the next 25 years"; but the 1980 WFS Assembly extended its horizons only "through the '80s." Too many unanticipated developments (notably the 1973 energy price shock) confounded the bright, bold forecasts of the late 1960s. Today, there is far more caution. Some have dropped out of futures, perhaps from fear of being wrong again. Those who stay in the

Chart 3.

Putting Minds Together: Commissions, Anthologies, and Symposia on the Future, 1914-1981.

1914 — Coomaraswamy, Ananda, and Arthur J. Penty (eds) *Essays in Post-Industrialism: A Symposium of Prophecy Concerning the Future of Society.* London: T.N. Foulis.
1928 — Beard, Charles A. (ed). *Whither Mankind.* NY: Longmans, Green and Co.
1929 — Brownell, Baker (ed). *Society Tomorrow.* NY: D. Van Nostrand.
1932 — Beard, Charles A. (ed). *America Faces the Future.* Boston: Houghton Mifflin.
1933 — President's Research Committee on Social Trends (William F. Ogburn, Director of Research). *Recent Social Trends in the United States.* NY: McGraw-Hill.
1937 — Cole, G.D.H. *et al. What Is Ahead of Us?* NY: Macmillan.
1943 — Anshen, Ruth Nanda (ed). *Beyond Victory.* NY: Harcourt, Brace.
1950 — Bliven, Bruce (ed). *Twentieth Century Unlimited.* Philadelphia: Lippincott.
1953 — Bryson, Lyman (ed). *Facing the Future's Risks.* NY: Harper & Row.
1959 — *The Future of Man.* A Symposium Sponsored by Joseph E. Seagram & Sons, New York.
1960 — President's Commission on National Goals. *Goals for America.* Administered by the American Assembly. Englewood Cliffs NJ: Prentice-Hall.
1961 — The Rockefeller Panel. *Prospect for America.* NY: Doubleday.
— Hoagland, Hudson, and Ralph W. Burhoe (eds). *Evolution and Man's Progress. Daedalus,* Summer 1961 (also Columbia University Press, 1962).
1963 — Aron, Raymond (ed). *World Technology and Human Destiny.* Ann Arbor: University of Michigan Press.
1964 — "Symposium on the Future," *The New York Times Magazine,* April 19, 1964.
— "The Prospects of American Civilization," *Saturday Review,* August 29, 1964.
1965 — Calder, Nigel (ed). *The World in 1984* (2 vols). Baltimore: Penguin Books (First published in *New Scientist* in 1964.)
1966 — Weiner, Myron (ed). *Modernization: The Dynamics of Growth.* NY: Basic Books.
1967 — Bell, Daniel (ed). *Toward the Year 2000: Work in Progress. Daedalus,* Summer 1967 (also Beacon Press, 1969).
— Ewald, William R. Jr. (ed). *Environment for Man: The Next Fifty Years.* Bloomington: Indiana University Press. (Two other volumes in this American Institute of Planners "consultation" followed in 1968: *Environment and Change* and *Environment and Policy,* both edited by Ewald.)
— Morphet, Edgar L. and Charles O. Ryan (eds). *Prospective Changes in Society by 1980.* Designing Education for the Future: An Eight-State Project, Vol 1. NY: Citation Press.
1968 — Foreign Policy Association (ed). *Toward the Year 2018.* NY: Cowles Education Corp.
— Gordon, Kermit (ed). *Agenda for the Nation.* Washington: Brookings Institution.
— Gross, Bertram M. (ed). *A Great Society?* NY: Basic Books.
— Gunn, James E. (ed). *Man and the Future.* Lawrence: University Press of Kansas.
(R) Kostelanetz, Richard (ed). *Beyond Left and Right.* NY: Morrow.
1969 — Baier, Kurt and Nicholas Rescher (eds). *Values and the Future.* NY: Free Press.
— Jungk, Robert and Johan Galtung (eds). *Mankind 2000.* First International Futures Research Conference (Oslo, 1967). Oslo: Universitetsforlaget (also London: Allen & Unwin, 1971).
— Warner, Aaron W. *et al* (eds). *The Environment of Change.* NY: Columbia University Press.
1970 — Duchêne, François (ed). *The Endless Crisis: America in the Seventies.* International Assn. for Cultural Freedom seminar at Princeton. NY: Simon & Schuster.
(R) Dunstan, Maryjane and Patricia W. Garlan. *Worlds in the Making: Probes for Students of the Future.* Englewood Cliffs NJ: Prentice-Hall.
— Japan Society of Futurology. *Challenges from the Future.* Second International Futures Research Conference, Vol III. Tokyo: Kodansha Ltd. (English language).
— National Goals Research Staff. *Toward Balanced Growth: Quantity with Quality.* Washington: US Government Printing Office. (NOTE: NGRS Disbanded soon after.)
(R) Ofshe, Richard (ed). *The Sociology of the Possible.* Englewood Cliffs: Prentice-Hall.
— Wallia, C.S. (ed). *Toward Century 21.* Stanford lectures. NY: Basic Books.
1971 — Ebling, F.J. and G.W. Heath (eds). *The Future of Man.* London: Academic Press.
(R) Kostelanetz, Richard (ed). *Human Alternatives.* NY: Morrow.
(R) Kostelanetz, Richard (ed). *Social Speculations.* NY: Morrow.
— Perloff, Harvey S. (ed). *The Future of the United States Government.* Commission on the Year 2000. NY: George Braziller.
(R) Pirages, Dennis C. (ed). *Seeing Beyond: Personal, Social, and Political Alternatives.* Reading MA: Addison Wesley.
— Urban, G.R. (ed). *Can We Survive Our Future?* London: The Bodley Head.

ever-shifting arena now speak of many possible futures, rather than *the* future.

2) Second, the course of events has turned sour. Except for Herman Kahn, who still seeks to provide us with a Western Capitalist Year 2000 Ideology,[6] any serious look at the future is likely to bring more doom and gloom. Unlike Julian Simon, who argues that there is a big market for pessimism,[7] I suspect that the market for good news is far greater, based on the finding that "The Pollyanna Principle" is a widespread human bias.[8]

3) The third reason is economic. There is no longer an excess of money to indulge in what some still consider to be speculative work. In academia, futures courses have perhaps been thought of as insubstantial or as a frill—and thus readily cut back. Perhaps they were threatening; I really don't know. But, unlike black studies or women's studies,

1972 — Plan Europe 2000/European Cultural Foundation. *The Future Is Tomorrow.* The Hague: Martinus Nijhoff (2 vols).
(R) Rasmussen, John P. (ed). *The New American Revolution: The Dawning of the Technetronic Era.* NY: Wiley.
(R) Theobald, Robert (ed). *Futures Conditional.* Indianapolis: Bobbs-Merrill.
(R) Toffler, Alvin (ed). *The Futurists.* NY: Random House.

1973 — Bundy, Robert (ed). *Images of the Future: The Twenty-First Century and Beyond. The Humanist,* Nov-Dec 1973 (expanded cloth edition from Prometheus Books).
(R) Kostelanetz, Richard (ed). *The Edge of Adaptation.* Englewood Cliffs: Prentice-Hall.
(R) Scheiber, Jane L. (ed). *America and the Future of Man: A Reader for the First Course by Newspaper.* San Diego: Univ. of California Extension/CRM Books.
(R) Tugwell, Franklin (ed). *Search for Alternatives.* Cambridge, MA: Winthrop.
— Wolfgang, Marvin E. (ed). *The Future Society: Aspects of America in the Year 2000. The ANNALS of the American Academy of Political and Social Science,* July 1973.

1974 — "An Inventory of Hope . . . Devoted to the Restoration of Confidence," *Saturday Review/World,* December 14, 1974.
— Rome World Special Conference on Futures Research. *Human Futures: Needs, Societies Technologies.* Guildford, Surrey UK: IPC Science and Technology Press.
— "2024 A.D.—A Probe Into the Future," *Saturday Review/World,* August 24, 1974.

1975 — *America's Continuing Revolution: An Act of Conservation.* Washington: American Enterprise Institute (US Bicentennial lectures).
— Mendlovitz, Saul H. (ed). *On the Creation of a Just World Order: Preferred Worlds for the 1990s.* World Order Models Project. NY: Free Press.
— Spekke, Andrew A. (ed). *The Next 25 Years.* Washington: World Future Society (presentations at Second General Assembly).

1976 (R) Clark, Robin (ed). *Notes for the Future: An Alternative History of the Past Decade.* NY: Universe Books.
— Owen, Henry and Charles Schultze. *Setting National Priorities: The Next Ten Years.* Washington: Brookings Institution.

1977 — Nash, Hugh (ed). *Progress As If Survival Mattered: A Handbook for a Conserver Society.* San Francisco: Friends of the Earth (new edition, 1981).

1978 (R) Cornish, Edward (ed). *1999: The World of Tomorrow.* Selections from *The Futurist.* Washington: World Future Society.
(R) Fowles, Jib (ed). *Handbook of Futures Research.* Westport CT: Greenwood Press.

1979 — Lipset, Seymour Martin (ed). *The Third Century: America as a Post-Industrial Society.* Stanford CA: Hoover Institution Press (also University of Chicago paperbound edition, 1980).
— OECD Interfutures Groups. *Facing the Future: Mastering the Probable and Managing the Unpredictable.* Paris: Organisation for Economic Co-Operation and Development (available from OECD Publications Center, Washington).

1980 — Barney, Gerald (Study Director). *The Global 2000 Report to the President: Entering the Twenty First Century.* Washington: US Government Printing Office (other editions from Pergamon Press, Blue Angel Inc, and Penguin Books).
— Duignan, Peter and Alvin Rabushka (eds). *The United States in the 1980s.* Stanford CA: Hoover Institution Press.
— Feather, Frank (ed). *Through the '80s: Thinking Globally, Acting Locally.* Washington: World Future Society (presentations at Third General Assembly).

1981 — Cleveland, Harlan (ed). *The Management of Sustainable Growth.* 1979 Woodlands Conference. Elmsford NY: Pergamon.
— Coates, Gary J. (ed). *Resettling America: Energy, Ecology & Community.* Foreword by Amory Lovins. Andover MA: Brick House Publishing Co.
— Coomer, James C. (ed). *Quest for a Sustainable Society.* 1979 Woodlands Conference. Elmsford NY: Pergamon.
(R) Jones, Ralph (ed). *Readings from FUTURES.* Guildford, Surrey UK: IPC Science and Technology Press.
— President's Commission for a National Agenda for the Eighties. *A National Agenda for the Eighties.* General Report. Washington: US Government Printing Office (other editions from NAL Mentor and Prentice-Hall).

(R) = reprint volume of material already published separately.

future studies has no well-defined constituency to promote it at the university. Nor is there the pull of an easily defined job market. Although corporations may be hiring more strategic planners than in the past, I know of no job for a futurist per se that has been publicly offered in the past three years.

4) The fourth reason for the stasis of future studies, to which I alluded at the start, is that futures does not fit well into academia. This is indeed an irony. More than 50 years ago, Alfred North Whitehead pronounced that "The spirit of generalization should dominate a university," and that "a university is imaginative or it is nothing."[9] He also warned of the "fatal disconnection of subjects which kills the vitality of our modern curriculum." Future studies, and its frequent ally, general systems theory, is at its best a generalist enterprise. It is imaginative. And, above all, it can connect many of the various subject areas of the university, which are now divided into a thousand little intellectual fiefdoms.

"Bringing minds together to consider the course of human affairs is in many respects the core activity of future studies."

The problem of the bureaucratization of knowledge has been mentioned many times. For example, a 1944 Columbia University conference on science, philosophy, and religion warned that

> [The accelerating increase of knowledge] has created an unbalance which is apparently making wise action more difficult for us than for many who knew far less. [Our age requires], beyond all those before, a mastery of various fields of knowledge for the solution of its complex and intricate problems, [yet] seems singularly unable to focus its energies and wisdom on them.[10]

Surely this analysis is even more appropriate today than it was nearly 40 years ago!

As I see it, the problems of the modern world are largely intellectual problems: problems of perception and of integrating the many pieces of knowledge that bear on our complex systems. The mounting difficulties of our time are a result of the fatal disconnection that Whitehead warned of, and of our singular inability to focus our energies that the Columbia University conference identified. Future studies is by no means a panacea, but it could be of considerable help in promoting integration. It can allow scholars to cross boundaries so as to think fully about our problems, and it can encourage the joining of people to consider the problems of our time.

For example, the Delphi technique attempts to stimulate and integrate the forecasts of a number of experts—although I should point out that the Delphi is far more useful in technological forecasting, where the experts can be identified, than in social forecasting, where there is a tendency to ideological homogeneity among the respondents and a corresponding failure to consider certain questions.

Technology assessment, if performed properly, is an attempt to fully consider the consequences of any new technology or group of technologies. As recently pointed out by Kenneth Boulding,[11] the management of complex systems will increasingly require such impact statements about various policies. This, too, is a form of thinking broadly about the future—thinking not only of technological impacts, but of distributional impacts, impacts over time, geographical impacts, and probability impacts—ideally, Boulding hopes, culminating in an overall impact statement. More simply phrased, all of us should think of all the consequences of all our decisions. We are far from this ideal at present.

To summarize the first question about significant changes in future studies, one of the most significant developments is that there has been little change. Future studies has been largely rejected by academia (perhaps because its proper role has never been identified), and the activity has remained more or less at a plateau in business, government, and various research institutes. I do now know of a single indicator to suggest a recent boom in future studies as a whole or in any of its more specialized activities such as forecasting, planning, or technology assessment. Claiming that future studies is progressing to a greater degree than it is, as many enthusiastic supporters are still prone to do, serves to ignore or grossly understate the immense unfilled potential of future studies not only for helping our society but for revitalizing academia.

Do universities need revitalizing? Consider the following statement by Stephen R. Graubard of the American Academy of Arts and Sciences:

> "Universities, for better or worse, carry an inordinate share of the burden for creating, protecting, and sustaining the intellectual capital and the professional competence on which the life of a modern industrial society . . . depends.[12]

The problem with this statement is that it is profoundly biased toward maintaining an obsolete image of the university and society. Graubard employs the seemingly cautious image of a "modern industrial society," rather than suggesting that our society is evolving into some other form—a post-industrial society, however defined. Accordingly, if our society is undergoing a profound change, we should not only be concerned with "creating, protecting, and sustaining" our intellectual capital and professional competence, but with renewing it. As John Gardner has urged, self-renewal is desirable in a democratic society.[13] If the society is in the throes of some profound change, self-renewal would, I think, be an absolute necessity.

Another way in which to make this important point is to consider the similarities between our intellectual and our physical capital. A recent and alarming report to the Council of State Planning Agencies, *America in Ruins*[14], warns that our phys-

ical infrastructure of public facilities—highways, bridges, ports, municipal water systems, dams, and jails—is wearing out faster than it can be replaced. Similarly, *if* we ask the question—and I do not know if it has ever been asked—could we find a similar decay in our intellectual capital? A provisional answer to this question is offered by my subsequent comments about the content of future studies.

Future Studies and The Two Post-Industrialisms

A second question to consider is concerned with major societal and/or intellectual changes emerging from a synthesis of futures reearch. "Futures research" is sometimes equated with future studies, but generally indicates a small sector of the future studies arena that employs quantitive techniques for the purposes of forecasting the probable future, rather than articulating alternative futures. Such techniques are often an evasion (conscious or unconscious) of far more fundamental concerns.

The very act of forecasting, using conventional concepts and assuming that they will prevail as our tools for interpreting reality, serves to stifle any consideration of alternative views of emerging realities and policy options. To cite Whitehead again, "Knowledge dos not keep any better than fish"[15] (although it should be noted that this observation was made before the era of frozen food). This widespread assumption of frozen knowledge—that what we think we "know" today will also be that which we "know" tomorrow—raises questions for much of our so-called futures research, and, indeed, has resulted in what I consider to be the decay of our intellectual capital in general.

In answering the question about societal changes, therefore, it is necessary to consider the full future studies arena, rather than the frequently narrower realm of futures research. Doing so allows a focus on what I consider to be a profound development in thinking about the future, with equally profound implications for higher education. I summarize this development as "the two visions of post-industrial society,"[16] or the two post-industrialisms.

Virtually all thinking about the future, especially the long-range future, can be arrayed along a single axis of contention about thenature of post-industrial society. Although there may be many post-industrialisms, I shall focus on two polarized definitions. On one side are those—most notably Herman Kahn and Daniel Bell—who have defined post-industrial society as a service society or an information society characterized by high technology, material affluence, and leisure. On the other side are those, such as the late E. F. Schumacher, Theodore Roszak, and Willis Harman, who view post-industrialism as a decentralized, ecologically-oriented society largely employing appropriate or intermediate technology.

To appreciate this potential debate on the two post-industrialisms, which can also be seen as a re-emergence of the Hamilton-Jefferson debate, it is necessary to hold a two-axis view of political possibilities (see Chart 4). The new Hamiltonian-Jeffersonian debate is best seen as an axis of cntention at right angles to the familiar left-right political spectrum. Rather than a debate over the public vs. private control of production, the post-industrialisms are in conflict over the purposes and scale of production. This axis is completely obscured by the flat-earth political thinking promulgated by pollsters and political scientists, which refers only to "the" political spectrum of liberal and conservative alternatives.

The great virtue of future studies, broadly considered, is that it is deeply involved with this alternative axis of contention. Conversey, there is very little left-right debate among futurists; few, if any, consider themselves as either Marxists or Reaganists. This is not to suggest that the conventional left-right debate is dead. Indeed, I speculate (which is looser than a forecast, and much looser than a prediction) that the 1984 US Presidential election will be a classic left-right donnybrook, brought on by the Reagan Administration's aggravation of existing socio-economic inequities in the pursuit of trickle-down, supply-side economics. Again to speculate (which is all one can do in considering political futures) after the Reagan Disaster, we will have either a "middle-of-the-road" welfare state regime to patch the holes in the safety net, or perhaps even a mild form of socialism as an antidote to the extremes of Reaganism. After one of these regimes also fails to fully address the complex

"I do not know of a single indicator to suggest a recent boom in future studies . . . forecasting, planning, or technology assessment."

tangle of modern problems, we may then be ready to see a serious and extensive debate about the two post-industrialisms, which may become the dominant focus of contenion not only in US politics but in all advanced *or* overdeveloped nations. (Note that I emphasize "advanced *or* overdeveloped" so as to avoid the bias of either post-industrialism.)

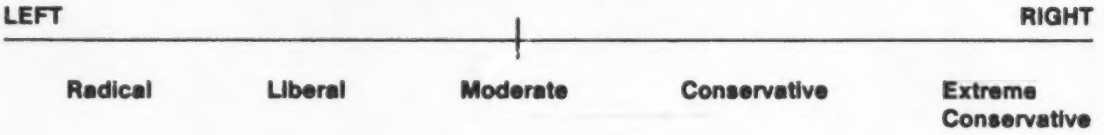
To understand these biases, a closer view of the two basic visions of post-industrialism is provided in Chart 5. Several important distinctions can be pointed out by this chart. First, the proponents of the self-reliant society, or whatever, have great difficulty in agreeing on a single label. Perhaps this abundance of labels is a celebration of human diversity, but in communicating a philosophy to the public, there must be some consolidation under a single banner. "Supply-side economics" may fail as a social philosophy, but at least that label conveys some clear meaning to both the present Administration and the thinking public at large.

Chart 4

Transition to the Two-Axis View of Politics

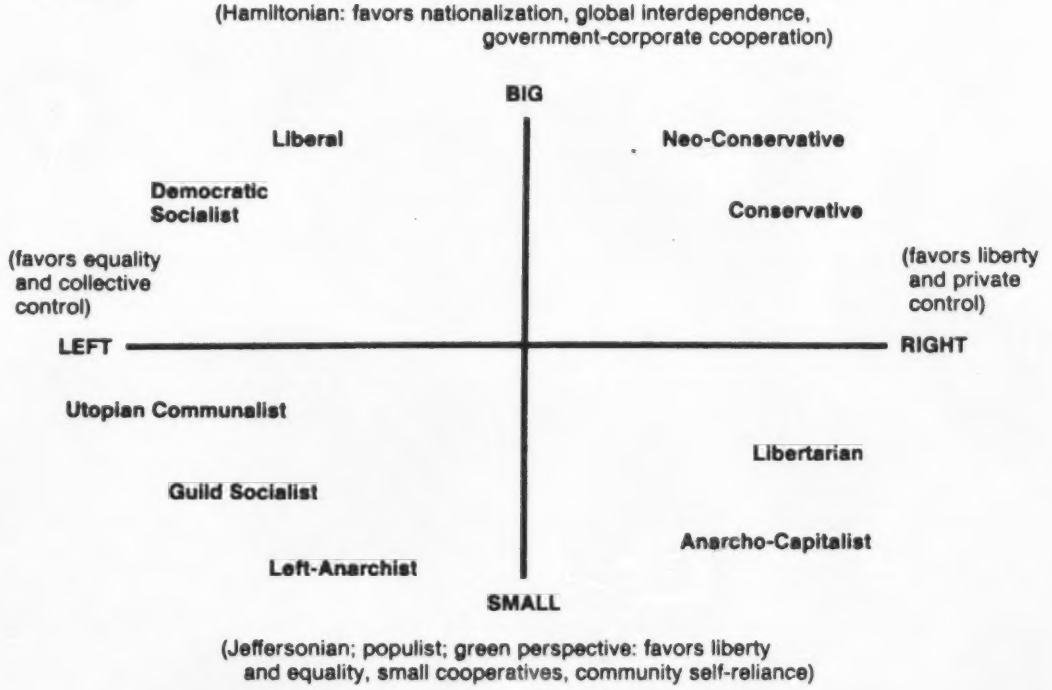
I. **Industrial Era One-Axis View of "The" Political Spectrum**

In modern societies, we have been conditioned by social scientists and pollsters to regard the range of viable political positions as a single spectrum between socialism or Communism on the left, and capitalism on the right.



II. **Emerging Politics of the Post-Industrial Era: The Two-Axis View**

As highly developed societies become more technologized, bureaucratized, and urbanized, the issue of the distribution of power (individuals and small groups vs. governments, corporations, and professionals) assumes increasing importance. The "other isms" (anarchism, populism, agrarianism, environmentalism), long-ignored or considered out-dated, take on new forms as a protest against what is seen as hyper-industrialism and industrial overshoot. By continuing to battle only each other, liberals and conservatives form a covert alliance that excludes other worldviews from consideration. The one-axis view favors liberals and conservatives; a two-axis view, by bestowing legitimacy, favors decentralists.



Second, most of the proponents of some variant of the self-reliant society are not affiliated with universities (e.g., Lester Brown, Marilyn Ferguson, Willis Harman, Hazel Henderson, Karl Hess, Ivan Illich, James Robertson, Kirkpatrick Sale, Mark Satin, and Bruce Stokes). Whereas, most of the advocates of a service society are affiliated with universities, especially major universities (e.g., Daniel Bell, Peter Drucker, S.M. Lipset). This pro- and anti-institutional bias aptly illustrates Miles' Law which states that "Where you stand depends on where you sit."[17] I hope that this is not an "Iron Law," or else, as I will subsequently suggest, we are in deep trouble.

My third observation is to note the two definitions of "The Good Life," which parallel the two

post-industrialisms. To be a bit flippant in labeling, although not at all untruthful, a sharp distinction can be drawn between "Playboy" and "Plowboy." *Playboy* magazine provides a prototypical contrast with *The Mother Earth News*, which features "Plowboy" interviews modeled after the well-known *Playboy* interviews. Hugh Hefner embodies the idealized good life of the materialistic Playboy, while Helen and Scott Nearing, columnists for *Mother Earth News* and authors of *Living the Good Life*, embody the frugal self-sufficient life of the Plowboy. The distinction is far from new: Arthur J. Penty, an early champion of the anti-industrial definition of post-industrialism, contrasted the Leisure State and the Work State in 1917, predicting that the former is an "utterly impossible dream so far as the majority are concerned," and that the Leisure State will eventually "fall to pieces from lack of any stability of character."[18]

Fourthly, note the stark contrast in methodologies. Proponents of the service society, notably corporations and professors of business administration, confine themselves to projecting trends and forecasting probable futures, using the framework of industrial era concepts that define "the economy" as the market economy only, "progress" as more GNP, "education" as attending school and college, and "national security" as megabuck defense spending. This is legitimated by scientistic posturing in the name of objectivity, and arcane models that purport to show all relevant variables. In contrast, proponents of a more self-reliant or "transformational" society avoid quantification (often to their detriment) but are eager to discuss their values and the need for preferred or alternative futures.

The service society advocates are obsessed with what they consider to be "realism," while those who advocate a Third Wave or some similar grand evolutionary transition are too often carried away by "idealism." Consider, for example, the ill-fated pronouncements of Charles Reich (1970) about the transition from Consciousness II to Consciousness III,[19] now being replayed in the 1980s by Marilyn Ferguson, who proclaims that the leaderless but powerful network of *The Aquarian Conspiracy* is bringing about radical change.[20] It is here that one can employ Marien's Iron Law of Cosmic Balderdash: that the heat and height of the rhetoric is inversely correlated with actual change! The purported progress of future studies, sadly, is another illustration. To summarize, we need both idealism and realism, but the two have become profoundly disconnected, similar to the disconnection between theory and empiricism within academia.

This leads to my final observation about the two visions of post-industrialism: there has never been a serious debate between their proponents. Like C. P. Snow's two cultures, a vast gulf separates the two —so much so that neither side has ever acknowledged the use of the "post-industrial" phrase by the other. In his 1965 "second look" at the two cultures of literary intellectuals and physical scientists, Snow argued that the loss of a common culture makes it difficult or impossible to take good action.[21] Similarly, I am convinced that such good action will be difficult or impossible without some serious debate and discussion between the two post-industrialisms.

Another view of this new axis of potential debate is provided in Chart 6, which contrasts Herman Kahn's "Basic Long-Term Multifold Trend"—an outgrowth of his 1967 work for the Commission on the Year 2000—with an alternative "BLTMT" that I have pieced together. An equal quantity of data might be assembled to support the argument that this alternative trend is happening to some degree —and there is an overwhelming amount of normative literature to argue that it *ought* to happen (see Appendix). Of particular interest to higher education are trends #2, #4, and #11 on science and technology, education, and work respectively. If one accepts the worldview of the second post-industrialism, many "scientific" paradigms of the industrial era will be seen as dangerously outmoded, professionals must develop a new approach toward their clients that emphasizes participation and self-help, and our concepts of work (and, consequently, preparation for work) will require revision. Which trend is more truthful about where we are headed? Which trend offers a more fruitful path for policy-makers to follow? Is it possible—or desirable—to hedge bets and biases by compromising between the two?

"Claiming that future studies is progressing to a greater degree than it is, serves to ignore or grossly understate the immense unfilled potential of future studies for helping our society."

I hope that these questions will be considered very carefully, for the policy path that we pursue is of central importance not only to the future of higher education, but to the future of society. To assist in understanding these arguments, I have prepared a selected list of background readings (see Appendix). There are more titles listed for the eco-decentralist post-industrialism because there is considerably more literature devoted to that end, with many of the most important works appearing in the past two years. Moreover, the times are difficult, so these challenges to the conventional wisdom may be welcomed—if not now, then in the near future, when the times may very well become far more difficult.

Six Revolutions and Four Scenarios

The bleak prospect of more difficult times leads to a consideration of the questions: why are these

Chart 5.
The Two Visions of Post-Industrial Society

	Post-Industrialism As Service Society	**Post-Industrialism As Self-Reliant Society**
Other Positive Titles of Supporters	Information Society (M. Porat, Y. Masuda) Knowledge Society (P. Drucker) Technetronic Society (Z. Brzezinski) Super-Industrial Economy (H. Kahn/Hudson Institute) Advanced Industrial Society Modernized Society	Sustainable Society (L. Brown) The Transformation (G. Leonard) Transindustrial Society (W. Harman) Convivial Society (I. Illich) Human Scale (K. Sale) Solar Age (H. Henderson) Green Perspective (J. Lobell) Ecological Humanism (H. Skolimowski, V. Ferkiss) Steady-State Society (H. Daly) Third Wave Civilization (A. Toffler) Epoch B (J. Salk) Aquarian Conspiracy (M. Ferguson) Humangrowth (H. Cleveland) Ecotopia (E. Callanbach) Metaindustrial Paradigm (G. Coates) Conserver Society (K. Valaskakis) *—plus a few dozen others*
Negative Titles of Opponents	Hyper-Expansionist (J. Robertson) Hypergrowthmania (H. Daly) Overdeveloped Society (C. Ryan) Consciousness II (C. Reich) Friendly Fascism (B. Gross) Technocracy (J. Ellul, J. Meynaud)	Neo-Malthusians (H. Kahn) Anti-Growth (H. Kahn) Technophobes (A. Aldridge)
Major Thinkers	Herman Kahn, Daniel Bell, Irving Kristol, Peter Drucker, Ben Wattenberg, S.M. Lipset.	Theodore Roszak, Ivan Illich, Hazel Henderson, James Robertson, Amory Lovins, Willis Harman, William Irwin Thompson
Major Research Institutes	**(Conservative)** American Enterprise Institute Heritage Foundation Hudson Institute Hoover Institution Institute for Contemporary Studies **(Liberal)** Brookings Institution The Urban Institute Resources for the Future Council on Foreign Relations Committee for Economic Development	Worldwatch Institute Institute for World Order International Foundation for Development Alternatives (Nyon, Switzerland) SRI International, Center for the Study of Social Policy New Alchemy Institute Institute for Local Self Reliance
Premises and Promises	"The Good Life" as affluence and leisure; mastery of environment; big technology to solve problems	"The Good Life" as useful work, peace, self-fulfillment, health; harmony with environment; appropriate technology
Methodologies	Operations research Forecasting the probable future Trend projection with standard indicators Quantitative models "Value-free" position (covert values)	General systems theory Alternative futures; scenarios Conventional concepts questioned for narrow view (e.g., GNP) Preferred futures "Value-conscious" position (overt values)

changes occurring, and what is their significance for higher education? As one might suspect, the two post-industrialisms have profoundly different views about what is changing and why changes are taking place.

The advocates of a service society envision a slow one-way evolutionary "march through the sectors" from agriculture, to industry, and on to services—especially quaternary services involving information and knowledge. The pervasive condition of infoglut and non-communication is ignored. Technology is the major source of change, supposedly freeing man from drudgery and enabling more mental work. Proponents of a more decentralized, self-reliant society view industrialism as having raced to an overdeveloped extreme, and argue that the movement toward helping ourselves and smaller, more human-scale organization represents a swinging back of the pendulum, or an upwards evolutionary spiral. The sources of change, in this worldview, include not only technology, but our images of man and society. As extensively argued

Chart 6.
Which Basic Long-Term Multifold Trend?

	Post-Industrialism As Service Society Growth of a high-technology, materially affluent service or information society, as described by Herman Kahn's "Basic Long-Term Multifold Trend" (*The Futurist*, June 1979 and various books by Kahn and Hudson Institute staff).	**Post-Industrialism As Self-Reliant Society** Movement toward a more decentralized and ecologically-oriented society, addressing the full range of human needs; essentially, a reversal or modification of the long-term trend to complex, depersonalized systems.
1. Culture	Increasingly sensate culture (empirical, secular, pragmatic, hedonistic); recently, an almost complete decline of the sacred.	Greater spirituality, with cultural movement toward a synthesis of spiritual and secular, "rational" and "non-rational," Eastern and Western traditions.
2. Science and Technology	Accumulation of scientific and technological knowledge.	Industrial era paradigms underlying much "knowledge" questioned, as is reductionist trivia; more use of holistic methods to cope with complexity.
3. Technological Change	Institutionalization of technological change, especially research, development, innovation, and diffusion.	Institutionalization of technology assessment; more emphasis on appropriate technologies and calculation of total costs.
4. Education and Professions	Increasing role of bourgeois, bureaucratic, "meritocratic" elites; increasing literacy and education for all.	Increasing emphasis on self-help, participation, and questioning of professionals; growing stress on learning needs and ignorance.
5. Defense	Increasing military capability of Western cultures, and recent diffusion of military technology to non-Western cultures.	Increased efforts to reverse the trend to militarism in all cultures; development of global peace-keeping structures and arms control agreements.
6. Impact of Western Culture	Increasing area of world dominated or greatly influenced by Western culture.	Increasing effort to limit domination of Western culture and allow survival of indigenous cultures.
7. Material Affluence	Increasing material affluence.	Decreasing material affluence as costs of overdevelopment exceed benefits; broader quality-of-life measures developed and employed.
8. World Population	Increasing rate of world population growth, until recently.	Decreasing rate of world population growth.
9. Urbanization	Urbanization, urban sprawl, and growth of megalopolitan areas and rural areas with urban amenities.	Declining urbanization in rich nations and growth of non-metro areas relative to metro areas; in poor nations, efforts to stem growth of rural-urban migration.
10. Environment	Increasing recent attention to macro-environmental issues.	Environmental costs included in new and more holistic measures of "progress" and "growth."
11. Work Force	Decreasing importance of primary and, recently, secondary occupations; soon a decline in tertiary occupations and emphasis on advanced quarternary occupations.	Stability or decline in service sector; more emphasis on self-reliance, self-service, part-time employment, job sharing, small farms or partly self-sufficient homesteads; new occupational categories necessitated.
12. Goals and Methods	Emphasis on "progress" and future-oriented thinking, discussion, and planning; social engineering.	Emphasis on new human needs-oriented definition of "progress"; serious consideration of preferred alternative futures replaces forecasting.
13. Pace of Change	Increasing universality of this multifold trend and increasing tempo of change in all of the above.	Increasing universality of this multifold trend and increasing tempo of change in all of the above.

Chart 7.
Six Possible Revolutions Viewed by the Two Post-Industrialisms

	Post-Industrialism As Service Society	Post-Industrialism As Self-Reliant Society
1. Nuclear War	Threat generally ignored or downplayed; emphasis on growing Soviet strength relative to US.	Emphasis on arms race and effect of defense spending on economy; need for world order and international law.
2. Economic Collapse	Threat generally ignored; emphasis on need for supply-side economics, government jobs program, or reindustrialization.	High potential for collapse; need broader definition of economy with emphasis on self-reliant informal sector, small business, more part-time work and self-help.
3. Population Growth/ Resources and Environment Limits	More resources than we think; not running short of most; present technology can feed world; pollution being fixed; too much concern with risk.	Need for recycling in era of scarcity; must stabilize population; grave pollution problems (acid rain, nuclear radwaste, other toxic wastes, CO_2).
4. Energy Transition	Need nuclear fission with better safeguards, fusion research, synfuels, new oil and gas sources.	Conservation as quickest payoff; "soft energy path" of renewable sources (solar, wind, hydro, biogas) in small-scale forms.
5. Biotechnology, Food, and Health	Creation of new species; life span extension; new drugs and vaccines; new food preserving and processing techniques.	Need to preserve disappearing species; sustainable and organic agriculture to stem soil loss; holistic health practices; improve lifestyle.
6. Communications Revolution/Information Society	Enthusiasm about new technologies: computers, satellites, cable TV, automation—enabling info utilities, office of future, electronic cottage.	Information society generally ignored; hostility to television; emphasis on human networks, technology assessment.

by Capra,[23] all of our problems are different facets of a single crisis of perception: we are trying to apply the concepts of an outdate worldview—the mechanistic worldview of Cartesian-Newtonian science—to a reality that can no longer be understood in terms of these concepts.

Hyperindustrial post-industrialism tends to understate the prospect of change, except in assessing the positive prospects of technology. Anti-industrial post-industrialism tends to overstate the social changes that are taking place and will take place, while ignoring those engenered by big technology. This contrast is illustrated in Chart 7, which emphasizes six areas with fair to good possibilities of revolutionary chnge in the 1980s or 1990s.[24] There may be other revolutions in our time, but these six are prime candidates to truly change the couse of human history, as the automobile, television, and the two world wars have done in this century.

The concentrated overview in Chart 7 illustrates the virtues and limitations of each post-industrialism as a view of the future. The service society proponents focus on the frontiers of complex technology: nuclear fission and fusion, recombinant DNA, capabilities for life-span extension, new drugs, computers, robots. One or more of these technologies may very well revolutionize our lives. But so might nuclear weapons unleashed, as these arms spread to more and more nations, and, as is likely, to terrorist groups. The proponents of a sane, humane post-industrialism are quick to point out this nuclear madness and the connection to nuclear power, as well as the potential for economic collapse, the gravity of world population growth and the growing gap between rich and poor. They are not anti-technology, but favor small-scale "convivial tools," to use Illich's phrase. They tend to ignore the glamorous and sophisticated technologies being developed in universities and corporations—the kind that bring big research grants and win Nobel Prizes. (Indeed, one eco-decentralist group recently established a "Right Livelihood Award" as a counter to the Nobel Prizes.)

Chart 7 demonstrates the great uncertainties that lie ahead, and the fact that neither post-industrialism alone has a broad enough vision to encompass the major possibilities. Chart 8 offers another way of demonstrating the parameters of possibility, as well as the implications for higher education. This chart sketches four states of society and four corresonding states of higher education. These four characterizations, or outlines for scenarios, correspond quite closely to the *Seven Tomorrows*, recently published by the futures research group at SRI International.[25] I'll refer to some of the corresponding SRI scenarios as I describe the four that I think are most important for higher education to consider.

1) *The Hub of the Electronic City of Intellect* is an updated version of Clark Kerr's "City of Intellect," described in his 1963 Godkin Lecture.[26] It is an optimistic extrapolation of existing long-term trends, parallel to the scenario of the SRI group

entitled "The Official Future." To succeed, it requires some technological breakthroughs to solve energy and resource problems, some control of pollution, and some control of the arms race—or else a great dose of luck. With a recovery of the nerve that Herman Kahn thinks we have lost, the economy will flourish once again, as will higher education and scientific research, both remaining essentially unchanged in structure and processes. I have little faith that this scenario is likely.

2) *The Flunky of Friendly Fascism.* This second scenario, I fear, is far more likely. Bertram Gross has warned of a probable "friendly fascism" in his recent book,[27] but does not indicate the role for higher education, which I describe as "flunky." The Friendly Fascist Flunky is a pessimistic extrapolation of short-term trends, parallel to the SRI scenario entitled "The Center Holds." The economy remains stagnant or worsens, after a series of one-term Presidencies. Big business and government combine in various ways, corresponding to various combinations of big business and academia. Major wars and acts of terrorism are somehow avoided. Some citizens prosper; most do not, but keep quiet, are quietly kept quiet, or are ignored. Business administration and technical training are the dominant majors on campus, and the liberal arts continue to shrink. The campuses are quiet, lest their budgets receive further cuts. Six-figure athletic coaches become common at big universities.

3) *The Dumb Dinosaur in a Dismal Society.* The third scenario features a rapid sinking, with major terrorist acts, a major war, a Second Great Depression, and/or an unraveling of our fragile civilization and its technical infrastructure. It will require individual and local self-reliance as a necessity, rather than a choice. The SRI futurists describe this extreme condition in their scenario entitled "Beginnings of Sorrow," and a less extreme condition in their scenario of "Chronic Breakdown." This is truly "America in Ruins," as warned by the Council of State Planning Agencies: the realization of Andrew Hacker's thoroughly bleak assessment of a decade ago, *The End of the American Era.*[28] Many campuses will be closed, incinerated, or converted to housing for refugees or felons.

Is such a dismal society really possible? Is the knowledge of our institutions of higher learning, and its graduates, so trivial and useless that both rapidly end up on the trash heap of history? Is higher education the modern equivalent of the dumb dinosaur? (Recent research indicates that the dinosaur was not so dumb, but I prefer the older, more poetic usage.)

At the end of her recent book on *The Politics of the Solar Age,* Hazel Henderson, who prides herself on being self-educated, asks how we can expect needed alternatives to come from dominant cultures and existing control centers, "since individuals learn faster than institutions and it is always the dinosaur's brain that is the last to get the messages."[29] Her friend, Fritjof Capra, echoes these words, proclaiming that "Our economic and institutional structures are dinosaurs, unable to adapt to environmental changes and therefore bound to die out."[30] Frankly, I know of no efforts to adapt, or even any recent proposals to do so.

Even in the "policy sciences," scholars seem to be hunkering down into their specialized niches, content to study leaves and twigs, while ignoring forests and eco-systems. I can easily point out, for example, several dozen schemes for revitalizing the American economy and society—but I have yet to encounter a hint of interest in exploring and reconciling these schemes. That, apparently, is for someone else to do. Nearly a decade ago, Cellarius and Platt proposed that scholars establish "Councils of Urgent Studies" to deal holistically with all of our many problems.[31] Nothing of the sort has transpired. Such proposals are not even made any more—yet another indication of declining interest in the future.

Is our great nation "rushing onward toward an abyss, at the bottom of which lies national destruction and individual ruin"? This dismal image, however timely it may seem, was actually ventured in 1864 by an obscure writer, Montgomery Throop.[32] It serves to remind us that utter despair has been known in other times. Perhaps, this time, the wolf will really come. Or is there some way that institutions—and humanity as a whole—will once again muddle through?

4) *The Adaptive Partner in a Balanced Society.* The fourth scenario suggests a possible path of adaptation for institutions of higher learning and for the wider society. It requires a widespread admission that ours is an ignorant society: that, despite all we know, our learning needs have been dangerously outdistancing our attainments.[33] It requires that our institutions acknowledge the near-fatal disconnection of our knowledge-producing apparatus, and take serious steps toward reforms that promote re-connecting. If the basic paradigms that guide our society are proving inadequate, steps must be taken to engage in an era of paradigm search, in which competing concepts are carefully examined, seriously discussed and debated, and, wherever possible, combined. I am not asking that all parts of all universities pursue such "relevant" concerns, but only that those parts of the academy that claim to be relevant—the social sciences and the professions in particular—make serious efforts to truly become so. If the university became the center of the search for new paradigms—rather than a peripheral spectator as at present—it could be a very exciting place.

How is this to be done in an era of zero-growth budgets and frozen faculties? First, higher education planners must cease their obsession with the dwindling numbers of high school graduates, and give far more attention to adult learners and their learning needs. Accepting the notion of an ignorant society would help to emphasize these needs, especially among elites. The general trend has been toward more adult and part-time learners, but the potential for facilitating adult learning is far from

Chart 8.
Four Scenarios of Higher Education in 1990

	Post-Industrialism As Service Society	**Post-Industrialism As Self-Reliant Society**
Positive Conditions for Serious Learning	**1. The Hub of the Electronic City of Intellect**	**4. The Adaptive Partner in a Balanced Society**
(Societal Context)	Exuberant well-educated Information Society Energy abundant and cheap through big technology Food, resource, and distribution problems solved Effective arms control by nation states	An acknowledged ignorant society takes learning seriously Energy abundant and cheap through conservation and small-scale renewable sources Serious disarmament and limited world order
(Higher Education)	Essentially same basic concepts rule society Essentially same structure of knowledge (disciplines and professions) Essentially same processes of knowledge production Essentialy same personnel practices Essentially same clientele mix of youth and adults	New paradigms for a complex era are widely adopted More integrative linkages; future studies widespread New structures for generating better paradigms; graduate training reformed Tenure abolished; faculty reward system reformed, with focus on quality of work More adults in fewer degree programs; learning sabbaticals widespread
Negative Conditions for Serious Learning	**2. The Flunky of Friendly Fascism**	**3. The Dumb Dinosaur Dying in a Dismal Society**
(Societal Context)	Pursuit of supply-side economics resulting in corporate domination, or reindustrialization with business-government cooperation Continued economic stagnation or worse Rhetoric of democracy and freedom justifies all actions	Major nuclear war, terrorist incident, and/or economic collapse worldwide An American Jaruzelski and/or anarchic chaos as high tech systems break down Widespread unemployment, and rioting Self-reliance and neo-agrarianism necessary for bare survival
(Higher Education)	Chairs of Free Enterprise widespread Research ties with corporations widespread Corporate support of collegiate sports; six-figure coaches common Business as major field of study; liberal arts shrink Rhetoric of academic freedom maintained; little dissent on campus	Academia of little or no help to society in distress; massive budget cuts as bankrupt states discover uselessness of "trivia factories" or "middle-class campus welfare scam" Entire campuses closed down, incinerated by bombs or riots, or converted to housing for refugees or felons

realized. Adults must and can learn, but they do not necessarily need or want credit or credentials.[34]

Ernest Boyer and Fred Hechinger, in their recent report to the Carnegie Foundation for the Advancement of Teaching, warn that democracy's greatest challenge is public ignorance of increasingly complex problems. If adult education were taken more seriously by colleges, they say, it would be taken more seriously by students. Education for citizenship must become a lifelong process, and Boyer and Hechinger propose that the nation's colleges and universities become systematically engaged in the civic education of adults.[35]

To focus attention on civic education and on adult learning needs, the leaders of higher learning should develop an emphasis on the President of the United States as our most important learner,[36] or our Learner-in-Chief. Perhaps, by doing so, we will no longer suffer the consequences of narrow and rigid ideologues in the White House and the Cabinet, and greater respect would be given to higher learning. Also, in relating higher learning to the Federal government, it is necessary for institutional leaders to press for a redefinition of one of our central paradigms, "national security," so as to include the role of human capital and the need for renewing it.[37] This can only be done, however, if we abandon the comforting mythology that our nation is well-educated because of the quantity of degrees possessed, and begin to focus on everyone's learning needs in a complex and troubled society.

In my fourth scenario of rational adaptation, the image of industrial era overshoot and the need for a more self-reliant and ecologically-oriented society must serve to correct the extreme biases in the professional schools toward big technology and a service society. The goal of a more balanced society would result in schools of agriculture placing greater emphasis on small farms and sustainable methods of production; in business schools devoting more attention to developing the skills needed to manage small enterprises and start new businesses, rather than maintain existing giants; in law schools that train justice-seekers rather than litigious fee-grubbers; in medical schools where students learn to prevent illness through better nutri-

tion and self-care; in architecture schools that focus more on self-help housing and creative restoration; and in schools of education that devote more attention to enhancing self-directed learning (which, according to Allen Tough, constitutes some 70% of all adult learning activity).[28]

The new emphasis in professional education on synergic power,[29] or cooperation with clients rather than hierarchic domination over them, should parallel the new spirit of cooperation that must somehow be encouraged among the academic disciplines. To facilitate this cooperation and the necessary reconnection of knowledge, every campus might create a center for future studies, general system studies, integrative studies, or whatever to serve as a "safe house" for any scholar wishing to move beyond the confines of his or her department. Why should such academic freedom only be given to a select few who have been awarded the rank of University Professor? Even with frozen campus budgets, such a center might be carved out of existing departmental budgets, *if* the case for intellectual priorities is clearly and forcefully made. I am quite sure that any analysis of the existing ratio of centrifugal specialization vs. centripetal integrators and generalists would support a policy that strongly favors sustained emphasis on the latter. These new centers must not act as typical insulated departments, but as gadflies and impresarios that strive to involve and stimulate all of the departments on a campus. (Needless to say, much experimentation will be necessary to find out what works best where.) In this way, perhaps, we can bring together the two cultures and the two post-industrialisms and perhaps indicate the path of good action.

I should stress that this concluding scenario has been only briefly sketched out, and that it is improbable—perhaps as unlikely as the first scenario. If pressed to quantify my estimates, I would give the two positive scenarios a probability of 10% each, and the two negative scenarios a probability of 40% each. I invite any counterargument to convince me that these probabilities should be substantially changed. I have tried to end my presentation with a positive scenario, for it is important to articulate ideals, or preferred futures. But it is equally important to be able to separate ideals from realities, and intentions from actual results. I am not so cynical as to dismiss all idealists as dreamers, or all existing institutions as dumb dinosaurs.

Attaining any positive conditions for serious learning in the future will be difficult, especially if institutions must adapt to a new role. But it is not impossible. If a desirable future is chosen and pursued with diligence—and if we are very lucky along the way—we can have a brighter future. We can get America working again, and we can get America thinking again. Shall we begin?

NOTES

1. Cooper, Jack H., "Special Problems of Professors of Higher Education," *The Review of Higher Education*, 4:1, Fall 1980, 25-3?

2. *The Future: A Guide to Information Sources*. Second Edition. Washington: World Future Society, 1979.

3. Eldredge, H. Wentworth, "University Education in Futures: A Mark III Survey," *FUTURES*, Feb 1975, pp. 15-30.

4. Howe, Florence, in *The New York Times*, 23 Nov 1981, B6. An earlier Howe estimate of 2000 courses in women's studies is in *The Chronicle of Higher Education*, 17 Dec 1973, p. 6.

5. Wolfgang, Marvin E. in Preface to Wolfgang (ed), *The Future Society. The ANNALS of the American Academy of Political and Social Science*, Vol 408, July 1973.

6. Kahn, Herman. *World Economic Development*. Boulder CO: Westview (Special Draft Edition for the International Chamber of Commerce), 1978, pp. 491-494.

7. Simon, Julian L. *The Ultimate Resource*. Princeton: Princeton University Press, 1981.

8. Matlin, Margaret, and David Stang. *The Pollyanna Principle: Selectivity in Language, Memory, and Thought*. Cambridge: Schenkman, 1979. (Brief version in *Psychology Today*, March 1978, 56ff.)

9. Whitehead, Alfred North. *The Aims of Education and Other Essays*. New York: Macmillan, 1929; Free Press, 1967.

10. Bryson, Lyman, *et al*, (eds). *Approaches to National Unity*. New York: Harper & Row, 1945, p.v.

11. Boulding, Kenneth E. *Evolutionary Economics*. Beverly Hills CA: Sage Publications, 1981.

12. Graubard, Stephen R., in *Daedalus*, Winter 1981, p.v.

13. Gardner, John W. *Self-Renewal: The Individual and the Innovative Society*. New York: Harper & Row, 1963.

14. Choate, Pat, and Susan Walter. *America in Ruins: Beyond the Public Works Pork Barrel*. Washington: Council of State Planning Agencies, 1981. [Brief version in *Challenge*, 24:4, Sept-Oct 1981, 53-57. Also see Special Report in *Business Week*, 26 Oct 1981.]

15. Whitehead, *op. cit.*, p. 98.

16. Marien, Michael, "The Two Visions of Post-Industrial Society," *FUTURES*, 9:5, Oct 1977, 415-431.

17. Miles, Rufus E. Jr, "The Origin and Meaning of Miles' Law," *Public Administration Review*, Sept-Oct 1978, 399-403.

18. Penty, Arthur J. *Old Worlds for New: A Study of the Post-Industrial State*. London: G. Allen & Unwin, 1917. [Also see Penty, *Post-Industrialism*. Allen & Unwin, 1922.]

19. Reich, Charles A. *The Greening of America*. NY: Random House, 1970.

20. Ferguson, Marilyn. *The Aquarian Conspiracy: Personal and Social Transformation in the 1980s*. Los Angeles: J. P. Tarcher, 1980.

21. Snow, Charles Percy. *The Two Cultures: And a Second Look*. New York: Cambridge University Press, 1965, p. 60.

22. Marien, Michael. Introduction in Marien, *Future Survey Annual 1980-81*. Washington: World Future Society, 1982. Also see Michael Marien and Matthew Hogan, *Communication/Transformation: An Annotated Bibliography of Trends, Forecasts, and Policy Proposals Concerning Electronic Technologies and the Information Age*. Draft, April 1982. (Prepared for Center for Integrative Studies, SUNY-Buffalo.)

23. Capra, Fritjof. *The Turning Point: Science, Society, and the Rising Culture*. New York: Simon & Schuster, 1982.

24. Marien, Michael, "Some Possible Revolutions by 2001" (Keynote Address) in AIR Forum Proceedings, 1981. Tallahassee FL: Association for Institutional Research, Dec 1981, pp. 3-15.

25. Hawken, Paul, James Ogilvy, and Peter Schwartz. *Seven Tomorrows: Toward a Voluntary History*. NY: Bantam Books, 1982.

26. Kerr, Clark. *The Uses of the University*. Cambridge MA: Harvard University Press, 1963.

27. Gross, Bertram M. *Friendly Fascism: The New Face of Power in America*. New York: M. Evans, 1980.

28. Hacker, Andrew. *The End of the American Era*. New York: Atheneum, 1970.

29. Henderson, Hazel. *The Politics of the Solar Age: Alter-*

natives to Economics. New York: Doubleday Anchor, 1981, p. 410.

30. Capra, *op. cit.*, p. 224; also see final paragraph, p. 419.

31. Cellarius, Richard A. and John Platt, "Councils of Urgent Studies," *Science*, Vol 177, 25 Aug 1972, 670-676. Also see John Platt, "What We Must Do," *Science*, Vol 166, 28 Nov 1969, 1115-1121.

32. Throop, Montgomery. *The Future: A Political Essay*. New York: James G. Gregory, 1864, p. 343.

33. Marien, Michael, "Higher Learning in the Ignorant Society," *The Futurist*, VI:2, April 1972, 49-54. Also see Marien, "The Discovery and Decline of the Ignorant Society, 1965-1985," in Thomas Green (ed), *Educational Planning in Perspective*. Guildford, Surrey, UK: FUTURES-IPC Science and Technology Press, 1971, pp. 80-89.

34. Tough, Allen. *The Adult's Learning Projects: A Fresh Approach to Theory and Practice in Adult Learning*. Second Edition. Austin TX: Learning Concepts, 1979.

35. Boyer, Ernest L. and Fred M. Hechinger. *Higher Learning in the Nation's Service*. Washington: Carnegie Foundation for the Advancement of Teaching, Nov 1981, p. 50.

36. Gross, Bertram M., "Some Questions for Presidents," in Gross (ed), *A Great Society?* New York: Basic Books, 1968, pp. 342-349.

37. Brown, Lester R. *Redefining National Security*. Worldwatch Paper 14. Washington: Worldwatch Institute, Oct 1977.

38. Tough, *op. cit.*

39. Craig, James H. and Marguerite Craig. *Synergic Power: Beyond Domination, Beyond Permissiveness*. 2nd Edition. Berkeley CA: ProActive Press, 1979. [Also see Paul Von Ward. *Dismantling the Pyramid: Government . . . By the People*. Washington: Delphi Press (475 L'Enfant Plaza), 1981. Both books, although not mentioning academia, can be instructive in suggesting more cooperative relationships between society and its institutions.]

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Appendix

Selected Reading on the Two Post-Industrialisms

Post-Industrialism as a Technological, Affluent, Service Society

Bell, Daniel. *The Coming of Post-Industrial Society*. NY: Basic Books, 1973.

Brzezinski, Zbigniew. *Between Two Ages: America's Role in the Technetronic Era*. NY: Viking, 1970.

Kahn, Herman. *The Coming Boom: Economic, Social and Political*. NY: Simon & Schuster, (in press) August 1982.

Kahn, Herman. *World Economic Development: 1979 and Beyond*. Boulder CO: Westview; NY: Morrow (pb), June 1979. Also see *The Next 200 Years*. Morrow, 1976.

Lipset, Seymour Martin (ed). *The Third Century: America as a Post-Industrial Society*. Stanford CA: Hoover Institution Press, 1979; Chicago: U of Chicago Press, 1980 (pb).

Porat, Marc Uri. *The Information Economy: Definition and Measurement*. Washington: US Dept of Commerce, Office of Telecommunications, 1977 (S/N 003-000-00512-7).

Rostow, W. W. *The Stages of Economic Growth: A Non-Communist Manifesto*. NY: Cambridge U Press, 1960; Second Edition, 1971.

Simon, Julian L. *The Ultimate Resource*. Princeton: Princeton U Press, Sept 1981.

Technological Society Criticized

Ellul, Jacques. *The Technological Society*. NY: Knopf, 1964 (first published in Paris, 1954).

Gross, Bertram. *Friendly Fascism: The New Face of Power in America*. NY: M. Evans, 1980; Boston: South End Press, 1982 (pb).

Linder, Staffan Burenstam. *The Harried Leisure Class*. NY: Columbia U Press, 1970.

Meynaud, Jean. *Technocracy*. NY: Free Press, 1969 (first published in Paris, 1964).

Mumford, Lewis. *The Myth of the Machine: I. Technics and Human Development. II. The Pentagon of Power*. NY: Harcourt Brace, 1967 and 1970.

Roszak, Theodore. *Where the Wasteland Ends: Politics and Transcendence in Postindustrial Society*. NY: Doubleday, 1972.

Post-Industrialism as a More Self-Reliant Society

Barney, Gerald O. (Study Director). *The Global 2000 Report to the President: Entering the Twenty-First Century*. Washington: USGPO (3 vols), July 1980; Elmsford NY: Pergamon, 1980; NY: Penguin, Feb 1982 (pb).

Berry, Wendell. *The Unsettling of America: Culture and Agriculture*. San Francisco: Sierra Club Books, 1977; NY: Avon Books, 1978 (pb).

Brown, Lester R. *Building a Sustainable Society*. NY: W.W. Norton, Oct 1981.

Capra, Fritjof. *The Turning Point: Science, Society, and the Rising Culture*. NY: Simon and Schuster, 1982.

Catton, William R., Jr. *Overshoot: The Ecological Basis of Revolutionary Change*. Champaign: U of Illinois Press, Dec 1980.

Galtung, Johan. *The True Worlds: A Transnational Perspective*. NY: Free Press, 1980.

Hamrin, Robert D. *Managing Growth in the 1980s: Toward a New Economics*. NY: Praeger, 1980.

Harman, Willis W. *An Incomplete Guide to the Future*. NY: W. W. Norton, 1979.

Henderson, Hazel. *The Politics of the Solar Age: Alternatives to Economics*. NY: Doubleday, 1981.

Illich, Ivan. *Tools for Conviviality*. NY: Harper & Row, 1973.

Norman, Colin. *The God That Limps: Science and Technology in the Eighties*. NY: Norton, 1981.

Robertson, James. *The Sane Alternative: A Choice of Futures*. St. Paul: River Basin, 1979.

Schumacher, E.F. *Small Is Beautiful: Economics as If People Mattered*. NY: Harper & Row, 1973.

Skolimowski, Henryk. *Eco-Philosophy: Designing New Tactics for Living*. Salem NH: M. Boyars, 1981.

A More Self-Reliant Society Criticized

(no book-length studies)

Also, in a more popular style: Marilyn Ferguson, *The Aquarian Conspiracy* (J.P. Tarcher, 1980); Jeremy Rifkin, *Entropy* (Viking, 1980); Kirkpatrick Sale, *Human Scale* (Coward, McCann, 1980); Mark Satin, *New Age Politics* (Delta, 1979); Bruce Stokes, *Helping Ourselves* (Norton, 1980), and Alvin Toffler, *The Third Wave* (Morrow, 1980; Bantam 1981). For further study, see John Applegath (ed), *Human Economy: A Bibliography* (The Human Economy Center, Box 551, Amherst MA 01004; June 1981/77 pages).